

STATE OF IDAHO

PERMIT TO CONSTRUCT
AN AIR POLLUTION
EMITTING SOURCE

PERMIT NUMBER

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AQCR

CLASS

SIC

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ZONE

UTM COORDINATE (km)

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4 8 2 6

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1. PERMITTEE

United States Department of Energy

2. PROJECT

Fuel Storage Area - Rack Reconfiguration Project

3. MAILING ADDRESS

785 DOE Place

CITY

Idaho Falls

STATE

Idaho

ZIP CODE

83402

SITE LOCATION COUNTY
Butte

NO. OF FULL TIME EMPLOYEES
6,000

PROPERTY AREA AT SITE (Acreage)
569,600 acres

PERSON TO CONTACT

J. R. Mitchell

TITLE

NEPA/Permitting Dept. Manager

TELEPHONE

(208) 526-7923

EXACT PLANT LOCATION

Fuel Storage Area is located at INEL as a part of the Idaho Chemical Processing Plant

GENERAL NATURE OF BUSINESS & KINDS OF PRODUCTS

Government Research and Support Facilities

3. GENERAL CONDITIONS

This permit is issued according to the Rules for the Control of Air Pollution in Idaho, Section 16.01.01.200, and pertains only to emissions of air contaminants which are regulated by the State of Idaho and to the sources specifically allowed to be constructed by this permit.

This permit (a) does not affect the title of the premises upon which the equipment is to be located, (b) does not release the permittee from any liability for any loss due to damage to person or property caused by, resulting from, or arising out of the design, installation, maintenance, or operation of the proposed equipment, (c) does not release the permittee from compliance with other applicable federal, state, tribal or local laws, regulations, or ordinances, (d) in no manner implies or suggests that the Department of Health and Welfare, or its officers, agents, or employees, assumes any liability, directly or indirectly, for any loss due to damage to person or property caused by, resulting from, or arising out of design, installation, maintenance, or operation of the proposed equipment.

This permit is not transferable to another person, place, piece or set of equipment. This permit will expire if construction has not begun within two years of its issue date or if construction is suspended for one year.

THIS PERMIT HAS BEEN GRANTED ON THE BASIS OF DESIGN INFORMATION PRESENTED WITH ITS APPLICATION. CHANGES OF DESIGN OR EQUIPMENT THAT RESULT IN ANY CHANGE IN THE NATURE OR AMOUNT OF EMISSIONS MUST BE APPROVED IN ADVANCE BY THE DEPARTMENT UNLESS EXEMPTED BY THE RULES FOR THE CONTROL OF AIR POLLUTION IN IDAHO SECTIONS 220 THROUGH 225.

Don K. Smith for E.P.C.
ASSISTANT ADMINISTRATOR
DIVISION OF ENVIRONMENTAL QUALITY

DATE: April 5, 1996

PERMIT TO CONSTRUCT

P E R M I T N U M B E R

PERMITTEE, PROJECT, AND LOCATION

United States Department of Energy
 Fuel Storage Area (FAST)
 Butte County

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SOURCE

Fuel Storage Area, Rack Reconfiguration, ICPP

SOURCE DESCRIPTION

Process Description

The Fuel Storage Area (FSA), rack reconfiguration project will involve the replacement of fuel storage racks in FSA pools #1, #5, and #6. The pool #1 will have 10-inch square ports, 20 feet tall with a total of 925 ports. The pool #5 will have 16-inch square ports, 15 feet tall with a total of 294 ports. Part of the pool #6 will have 8-inch square ports, 15 feet tall with a total of 300 ports. The other three pools, #2, #3 and #4 and part of pool #6 remain the same with the arrangements shown below:

Pool #2: 10-inch square ports, 10 feet tall with a total of 486 ports.
 Pool #3: 18-inch square ports, 10 feet tall with a total of 216 ports.
 Pool #4: 12-inch square ports, 10 feet tall with a total of 384 ports.
 Pool #6 8-inch square ports, 10 feet tall with a total of 300 ports.

All fuel ports and rack dimensions are nominal. Tolerances from the given nominal dimensions shall be within the limits of the criticality safety analysis. When the project is complete, there will be approximately 2,905 ports in the six (6) pools, representing 36,095 ft³ of storage volume in which fuel may be stored within the limits of the criticality safety analysis. Prior to project completion, the number of available ports in the pools may fluctuate above and below 2,905 but the occupied volume shall not exceed 36,095 ft³. This volume includes the space occupied by fuel and space needed to maintain criticality safety.

Emissions from the FSA pools are released through the main Fluorinel and Storage (FAST) filtration system.

Control Description

Radioactive particulate emissions from the FSA pools are normally controlled by a single stage of prefilters and a single stage of certified HEPA filters. (Each stage contains four (4) parallel filter banks with 24 filters per bank). All of these banks are typically on-line except during system maintenance. The efficiency of a certified HEPA is 99.97 percent.

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SOURCE

Fuel Storage Area, Rack Reconfiguration, ICPP

2. EMISSION LIMITS

2.1 Radionuclide Emissions

The source shall operate within the requirements of U.S. Environmental Protection Agency (EPA) National Emission Standards for Hazardous Air Pollutants (40 CFR 61; Subparts A and H). Radionuclide emissions from the CPP-767 stack (FAST building) shall not by themselves, or in combination with emissions from other INEL sources, cause any member of the public at any off-site point where there is a residence, school, business or office to receive a dose of greater than 10 millirem per year effective dose equivalent; nor shall radionuclide emissions from the FSA by themselves cause any member of the public at any off-site point where there is a residence, school, business or office to receive a dose greater than 4.2E-05 mrem per year.

3. MONITORING REQUIREMENTS

3.1 Radionuclide Emissions Monitoring

The permittee shall monitor and record radionuclide emissions in accordance with the requirements of 40 CFR Part 61, Subparts A and H.

HEPA Filter Monitoring

The permittee shall monitor and maintain the HEPA filters as specified in Appendix A of the permit.

4. OPERATING REQUIREMENTS

Maximum Fuel Position Occupancy

When the project is completed there will be approximately 2,905 ports in six (6) pools representing 36,095 ft³ of storage volume in which fuel may be stored within the limits of the criticality safety analysis. Prior to project completion, the number of available ports in the pools may fluctuate above and below 2,905 but the occupied volume shall never exceed 36,095 ft³. This volume includes the space occupied by fuel and space needed to maintain criticality safety.

HEPA Filter Operations

The permittee shall operate the HEPA filters as specified in Appendix A of the permit.

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SOURCE

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5. REPORTING AND RECORDKEEPING REQUIREMENTS

HEPA Filters

The permittee shall submit a report to the Department on HEPA filter operation as specified in Appendix A of the permit.

Radionuclide Emissions

The permittee shall submit an annual report to the Department indicating the results of the monitoring of the FAST stack emissions and the highest calculated dose equivalent as required in 40 CFR 61.94.

Individual Significant Radionuclides

Emissions of individual significant radionuclides shall be measured in accordance with 40 CFR 61.93(a) and recorded in accordance with 40 CFR 61.95. This information shall be recorded in curies per year and shall be kept on-site for a period of two (2) years and shall be made available to Department representatives, who have adequate DOE security clearance, upon request.

Reporting of Classified Radionuclides

If the permittee determines that any information required by this permit is classified information, the permittee shall notify the Department, in writing and within the applicable time period, that the classified information exists and provide a general description of the information. The permittee shall provide the classified information to an employee of the Department with adequate clearance upon written request by the Department.

DATE: April 5, 1996

APPENDIX A
HEPA FILTER GENERAL REQUIREMENTS

1 MONITORING REQUIREMENTS

- 1.1 The permittee shall conduct periodic in-place efficiency tests on each certified HEPA filter or HEPA filter bank, as applicable. The first test shall be conducted within 90 days of startup and subsequent tests shall be conducted at least every 12 months thereafter, per Nuclear Air Cleaning Handbook, ERDA 76-21, Section 8.3.5, "Frequency of Testing". Testing will be conducted using guidelines of ASME N510, Section 10, "HEPA Filter Bank In-Place Test". In addition, after replacement or installation of a HEPA filter, an in-place efficiency test shall be conducted within 90 days of the date that the HEPA filter is placed in operation.
- 1.2 A pressure monitoring device shall be maintained to enable monitoring of the pressure drop across each certified HEPA filter bank. The pressure drop monitoring equipment shall be maintained in good working order. Pressure drop shall be monitored continuously when the HEPA filter bank is in use.

2. OPERATING REQUIREMENTS

- 2.1 Certified HEPA filter efficiency shall be maintained at or above 99.97 percent removal efficiency as determined by the guidelines of ASME N510, Section 10.
- .2 If the removal efficiency of a certified HEPA filter or HEPA filter bank, as applicable, falls below 99.97 percent, as determined by ASME N510, Section 10, certified filters shall be isolated or replaced within 10 days until the required efficiency is achieved.
- 2.3 Each certified HEPA filter shall be operated at a pressure drop that is limited to less than 5.0 inches water column. If the total pressure drop across the HEPA filter bank exceeds 5.0 inches water column, the permittee shall isolate it or replace it within 10 days. The Department shall be notified in writing within five days of all instances that pressure drop exceeds five inches water column.

Within 90 days of issuance the permittee shall submit to the Department an operating and maintenance (O&M) manual which describes the procedures which will be followed to assure compliance with Sections 1 and 2 of this permit Appendix.

Within 90 days of issuance the permittee shall submit to the Department a quality assurance program, based on ASME N510 guidelines, which defines methods and procedures that will be used to assure that quality and representative data are collected while performing in-place HEPA filter tests and measuring pressure drops across HEPA filters banks.

DATE: April 5, 1996

APPENDIX A (cont'd)

REPORTING REQUIREMENTS

The results of the initial in-place HEPA filter bank test conducted using the guidelines of ASME N510, Section 10 shall be reported to the Department within 30 days of performing the test.

The permittee shall submit an annual statement to the Department, based on a calendar year and due thirty (30) days after the end of each calendar year, stating that all the requirements under this Appendix have been met. In addition, records of the following information shall be kept on-site and shall be made available for Department review upon request:

- 3.2.1 The dates and results of all in-place efficiency tests using the guidelines of the ASME N510 HEPA filter bank in-place test method.
- 3.2.2 The dates of replacement of HEPA filter elements.
- 3.2.3 Records of all instances when pressure drop exceeded 5 inches water column and the corrective actions taken to demonstrate compliance with Section 2.3 of this Appendix.

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PERMIT TO CONSTRUCT GENERAL PROVISIONS

All emissions authorized herein shall be consistent with the terms and conditions of this permit and the Rules for the Control of Air Pollution in Idaho. The emission of pollutant in excess of the limitations specified herein, or noncompliance with any other condition or limitation contained in this permit, shall constitute a violation of this permit and the Rules for the Control of Air Pollution in Idaho, and the Environmental Protection and Health Act, Idaho Code 39-101, et seq.

The permittee shall at all times (except as provided in the Rules for the Control of Air Pollution in Idaho) maintain in good working order and operate as efficiently as practicable, all treatment or control facilities or systems installed or used to achieve compliance with the terms and conditions of this permit and other applicable Idaho laws for the control of air pollution.

The permittee shall allow the Director, and/or his authorized representative(s), upon the presentation of credentials:

- 1) To enter at reasonable times upon the premises where an emission source is located, or in which any records are required to be kept under the terms and conditions of this permit; and
- 2) At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit, to inspect any monitoring methods required in this permit, and require stack emission testing in conformance with the Department's Procedures Manual for Air Pollution Control when deemed appropriate by the Director.

Nothing in this permit is intended to relieve or exempt the permittee from compliance with any applicable federal, state, or local law or regulation, except as specifically provided herein.

The permittee shall notify the Idaho Division of Environmental Quality, in writing, of the required information for the following events within five working days after occurrence:

- 1) Initiation of Construction - Date
- 2) Completion/Cessation of Construction - Date
- 3) Actual Production Start up - Date
- 4) Initial Date of Achieving Maximum Production Rate - Production Rate and Date

If emission testing is specified, the permittee must schedule such testing within sixty (60) days after achieving the maximum production rate, but not later than one hundred and eighty (180) days after initial start up. Such testing must strictly adhere to the procedures outlined in the Department's Procedures Manual for Air Pollution Control, and shall not be conducted on weekends or state holidays without prior written Department approval. Testing procedures and specific time limitations may be modified by the Idaho Division of Environmental Quality by prior negotiation if conditions warrant adjustment. The Idaho Division of Environmental Quality shall be notified at least fifteen (15) days prior to the scheduled performance test. Any records or data generated as a result of such performance test shall be made available to the Department upon request.

The maximum allowable operating rate shall be limited to 120% of the average operating rate attained during the performance test period, unless (1) a more restrictive operating limit is specified elsewhere in this permit, or (2) at such an operating rate, emissions would exceed any emission limit(s) set forth in this permit.

The provisions of this permit are severable, and if any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

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| DATE: April 5, 1996 |
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